SRRTTF - Green Chemistry Workgroup

## Proposed Ideas for SRRTTF-ACE Green Chemistry Advancement funding

There is need for Increased awareness of the issue of inadvertent PCBs in pigments in paper and packaging, especially by those who can influence their manufacture, use and procurement. In addition, there is need for creative and systemic solutions that will result in cleaner newsprint and packaging materials that will enhance the current quality of recycling. In order to do so, we propose the following activities to be led and coordinated by Northwest Green Chemistry (NGC) in collaboration with others. The scope of work and proposed budget is presented below as a two-year plan:

1. **Task 1. Prepare a white paper to increase awareness of key stakeholders (year 1, $5k).** Prepare a white paper intended for an audience that includes paper and packaging manufacturers, pigment manufacturers, newsprint and packaging users, NGOs including the Sustainable Packaging Coalition, industry associations and USEPA and other regulatory agencies. Depending on the recommendations from the SRTTF, the paper may be submitted for publication in a journal such as the Journal of Environmental Management, Green and Sustainable Chemistry or Integrated Environmental Assessment and Management. There is also an option to use elements of the white paper for shorter trade journals. The authors will first familiarize themselves with available information published on the topic of inadvertent PCBs in pigments and products and build the article from that base. The paper would be used in part to open discussions with [ HYPERLINK "http://greenblue.org/" ] that is an environmental nonprofit based in Charlottesville, Virginia that manages the [ HYPERLINK "http://greenblue.org/work/sustainable-packaging-coalition/" ] and promotes sustainable materials by encouraging innovation and best practices. The paper would describe:
    - Background information on PCBs including inadvertent PCBs
    - Why PCBs are a problem
        - Fish bioaccumulation & water quality criteria
        - Circularity impacts associated with PCBs
        - Paper recycling as a source of PCBs
    - How widespread PCBs are
        - Delaware, San Francisco, Spokane, Duwamish River, & Pend Oreille River
        - International
    - How these areas are dealing with PCBs
        - Based on interviews with entities such as: IEP, Penderay Newsprint, WA State Dept. of Ecology, WA State Dept. of Enterprise Services, etc.
        - Other examples
    - PCBs in pigments
        - What product applications are impacted (e.g. newsprint, packaging, etc.)
    - Safer alternatives with no or low PCBs
2. **Task 2a. Safer alternatives for newsprint (Total $15K).**
    - **Year 1 ($5K)**
        - Identify and engage key stakeholders including but not limited to:
            - Those from the newsprint sector and recycling sector (e.g. referrals from IEP)
            - Colorant manufacturers (e.g. Clariant, others)
            - Safer product certification bodies (e.g. Sustainable Green Printing Partnership)
            - Industry associations (e.g. Color Pigments Manufacturing Assocation (CPMA), ETAD)

- Use information from the white paper outlined in Task 1 to increase awareness of the issues.
- Understand procurement requirements
- Identify potential alternatives
- Identify potential alternatives that contain ultra low or no inadvertent PCBs in newsprint sector.
- Prepare a written work plan. Use recent experience with road paint as a model to scope out viable options and to create a plan for a market-based initiative for identifying and moving to ultra low or no inadvertent PCB newsprint colorants

- **Task 2b. Year 2 ($10K)**
  - **Implement work plan.** Implement proposed plan in a pilot project (Project scope to be determined in full pending results of year 1 Phase 1)

3. **Safer alternatives in the packaging sector. (Total 20K)**
   - **Task 3a. Awareness, motivation and planning (year 1, 5K)**
     - Identify key packaging sector stakeholders. Including manufacturers of pigments and packaging, recyclers, organizations such as the Sustainable Packaging Coalition (SPC), certification bodies and others
     - Use information from the white paper outlined in Task 1 to increase awareness of the issues with a focus on SPC management and its Industry Leadership Coucil
       - Host a webinar and discussion to provide opportunities for questions and answers
       - Share white paper and other relevant publications as appropriate
       - Build into educational and conference materials as requested by SPC.
     - Develop a written work plan of action including development of a design guide, and further education and awareness activities and a market-based initiative to drive the identification and adoption of pigments with ultra low/no inadvertent PCBs.
   - **Task 3b. Implement work plan (year 2, 15K).**
     - Implement action to create a market-based initiative to promote colorants for use in packaging with ultra low or no inadvertent PCBs.
     - Develop a design guide that features color indices and available options that contain ultra low/no inadvertent PCBs.
4. **Task 4. Prepare a white paper to increase awareness of key stakeholders (year 2, $5k**). Similar to the white paper on inadvertent PCBs in newsprint and packaging, research and prepare a similar paper for inadvertent PCBs in titanium dioxide. The paper would provide a literature review of what is known about PCBs in [ HYPERLINK "http://www.essentialchemicalindustry.org/chemicals/titanium-dioxide.html" ], discuss how widely the material is used, the range of products it is found in, how it is manufactured, etc.

| Task | Budget ($) Year I | Budget ($) Year 2 (rough estimates pending project plans) | Deadline |
|---|---|---|---|
| **1.** Develop awareness by preparing an article on inadvertent PCBs in pigments used in newsprint and packaging for use with stakeholders | 5K | | **June 30 2018** |
| **2a.** Scope project plan for ultra low/no inadvertent PCBs in newsprint | 5K | | **June 30 2018** |
| 2b. Implement ultra low/no inadvertent PCBs in newsprint project plan | | 10K | *June 30 2019* |
| **3a.** Scope project plan for ultra low/no inadvertent PCBs in packaging materials | 5K | | **June 30 2018** |
| 3b. Implement ultra low/no inadvertent PCBs in packaging materials project plan | | 15K | *June 30 2019* |
| 4. Develop awareness by preparing an article on inadvertent PCBs in titanium dioxide for distribution | | 5K | *June 30 2019* |
| Total | 15K | 30K | |

**Milestones and Deliverables:**

1. Task 1.
    a. A draft of the paper would be due in the beginning of June 2018. SRRTTF members could assist NW Green Chemistry with further development of the paper and guide where it is submitted for publication if desired.
    b. Other outcomes could be the development of webinars or educational materials to increase awareness of the issue among the Sustainable Packaging Coalition leadership, management and members. This additional awareness could create a greater interest in finding alternatives and lend support to SRRTTF's efforts.
2. Task 2a.
    a. A detailed project plan of action to market-based initiative for identifying and moving to ultra low or no inadvertent PCB newsprint colorants for implementation in Task 2b.
3. Task 3a.
    a. A detailed work plan of action including
        i. An outline for development of a design guide
        ii. Further planned education and awareness activities
        iii. Plans for promoting the identification and adoption of pigments with ultra low/no inadvertent PCBs in the packaging sector.
4. Year 2 milestones and deliverables will depend in part on outcomes of Year 1.